

4. Given the set of numbers (0, 1, 2, 3, 4, 5, 6, 7, 8), if one of the numbers of the set is chosen at random, find the probability that the number is a solution of $3x + 1 < 13$.

[A] $\frac{1}{2}$

[B] $\frac{4}{9}$

[C] $\frac{1}{9}$

[D] $\frac{5}{9}$

$$3x + 1 < 13$$
$$\begin{array}{r} -1 \quad -1 \end{array}$$

$$\frac{3x}{3} < \frac{12}{3}$$

$$x < 4$$

5. What is the probability of drawing a spade from a deck of 52 playing cards?

[A] $\frac{1}{2}$

[B] $\frac{13}{100}$

[C] $\frac{1}{3}$

[D] $\frac{1}{4}$

$\frac{13 \text{ spades}}{52 \text{ cards}}$



$\frac{1}{4}$

5. Four cards are drawn at random without replacement from a standard deck of 52 cards. Find $P(4 \text{ diamonds})$.

[A] $\frac{1}{256}$

[B] $\frac{11}{4,165}$

[C] $\frac{4}{13}$

[D] $\frac{1}{13}$

$$\frac{1}{4} \cdot \frac{12}{51} \cdot \frac{11}{50} \cdot \frac{10}{49} = \frac{1320}{499800} = \frac{11}{4165}$$

1st Draw 2nd Draw 3rd Draw 4th Draw

1. 060728a, P.I. A.N.7

Max goes through the cafeteria line and counts seven different meals and three different desserts that he can choose. Which expression can be used to determine how many different ways Max can choose a meal and a dessert?

21, 7 · 3



M₃

M₄

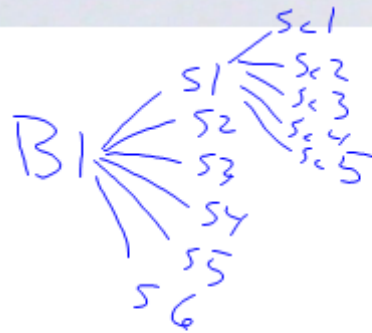
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2. 010612a, P.I. A.N.7

Robin has 8 blouses, 6 skirts, and 5 scarves.

Which expression can be used to calculate the number of different outfits she can choose, if an outfit consists of a blouse, a skirt, and a scarf?

$$8 \cdot 6 \cdot 5 = 240$$



12.

080502a, P.I. A.N.7

Cole's Ice Cream Stand serves sixteen different flavors of ice cream, three types of syrup, and seven types of sprinkles. If an ice cream sundae consists of one flavor of ice cream, one type of syrup, and one type of sprinkles, how many different ice cream sundaes can Cole serve?

$$16 \cdot 3 \cdot 7 = 336$$



18. 010218a, P.I. A.N.7

When Kimberly bought her new car, she found that there were 72 different ways her car could be equipped. Her choices included four choices of engine and three choices of transmission. If her only other choice was color, how many choices of color did she have?

$$4 \cdot 3 \cdot x = 72$$

$$12x = 72$$

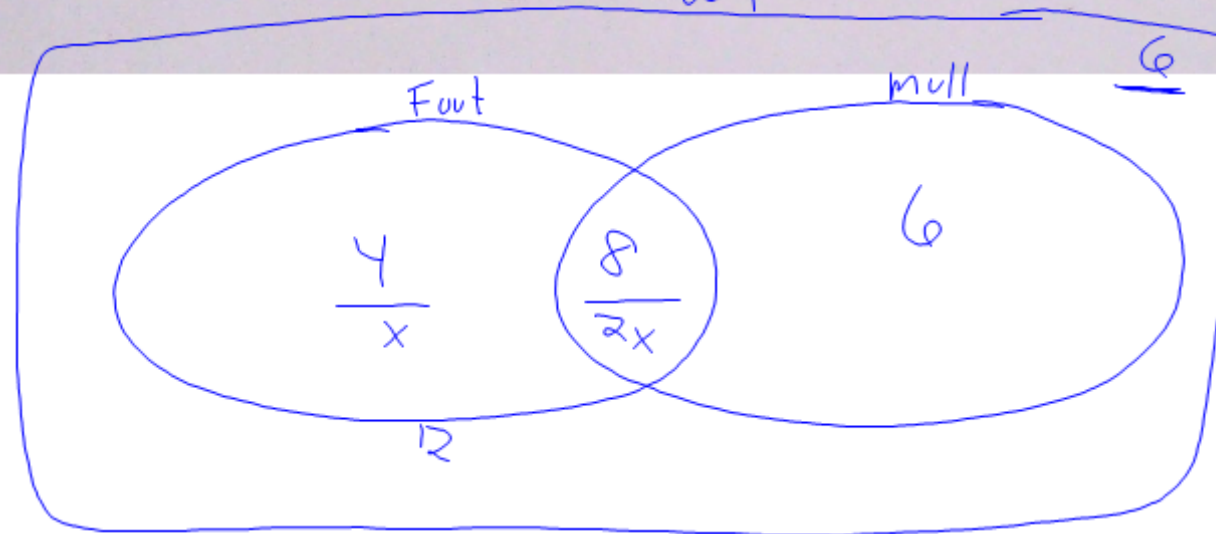
$$x = 6$$

In Arizona the group of 24 students visited the Grand Canyon. Some spent their time white-water rafting, while the rest went down into the canyon either by foot or by mule or both.

- The number who went by both mule and foot was twice the number who went solely by foot.
- The number who went only by mule was the same as the number who went white-water rafting.
- The number who went by foot was half the total number.

How many went white-water rafting? 24

$$\begin{aligned}x + 2x &= 12 \\ 3x &= 12 \\ x &= 4\end{aligned}$$



In Missouri the group of 24 students visited Hannibal, the home of Mark Twain.

- 11 of the students had read Twain's book *The Adventures of Tom Sawyer*.
- 7 had read his book *The Adventures of Huckleberry Finn*.
- 10 had read his book *The Prince and the Pauper*.
- 3 had read both *The Adventures of Huckleberry Finn* and *The Adventures of Tom Sawyer*.
- 4 had read both *The Adventures of Tom Sawyer* and *The Prince and the Pauper*.
- 1 had read both *The Prince and the Pauper* and *The Adventures of Huckleberry Finn*.
- 1 had read all 3 stories.

How many had read none of the 3 books by Twain?

